ABSTRACT

The present invention provides a method for simplifying and significantly enhancing the sensitivity of nucleic acid hybridization assays. A method is described whereby a single-stranded primary nucleic acid sequence that includes a region of sequences complementary to a single-stranded target nucleic acid sequence is hybridized to the target molecule. Stability of the double-stranded complex thereby formed can be enhanced by using RNA as the probe if DNA is the target or DNA as the probe if RNA is the target. The probe-target complex is subsequently immunocaptured for detection. After washing away extraneous material, a secondary nucleic acid sequence containing many repeating sequence units is hybridized to the probe component of the immobilized probe-target complex. Detection occurs following hybridization of many labelled nucleic acid sequence probes to each of the repeating sequence units of a nucleic acid amplification probe. Thus, attachment of multiple labelling probes to an amplification probe that is hybridized to an immobilized probe-target complex, provides a simplified method for amplifying the detection signal and therefore the sensitivity of nucleic acid hybridization assays.